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Application No.	S2002/0036
Date of Filing	23rd January 2002
Applicant	Richard Mc Cormick, an Irish Citizen of Woodville, Dunboyne, County Meath, Ireland

Dated this 15th day of January 2003

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FORM NO. 1

APPLICATION No. S020036

Request for the Grant of a Patent

PATENTS ACT, 1992

The Applicant(s) named herein hereby request(s)

☐ the grant of a patent under Part II of the Act

☒ the grant of a short-term patent under Part III of the Act

on the basis of the information furnished hereunder

1. **Applicant(s)**

Name	**RICHARD McCORMICK**
Address	Woodville, Dunboyne, Co. Meath, Ireland.
Description/Nationality	an Irish citizen

2. Title of Invention **AN EQUINE FEED PRODUCT**

3. **Declaration of Priority on basis of previously filed application(s) for same invention (Sections 25 & 26)**

Previous Filing Date	Country in or for which Filed	Filing No.

4. **Identification of Inventor**

Name of person believed by Applicant to be the Inventor

Name :	RICHARD McCORMICK
Address :	Woodville, Dunboyne, Co. Meath, Ireland.

APPLICATION No. S020036

5. **Statement of right to be granted a patent (Section 17(2)(b))**

The applicant is the inventor.

6. **Items accompanying this Request - tick as appropriate**

(i) ☒ prescribed filing fee (€60.00)
(ii) ☐ specification containing a description and claims
☒ specification containing a description only
☐ drawings referred to in description or claims
(iii) ☐ an abstract
(iv) ☐ copy of previous application(s) whose priority is claimed
(v) ☐ translation of previous application whose priority is claimed
(vi) ☒ Authorisation of Agent (this may be given at 8 if this Request is signed by the Applicant(s)

7. **Divisional Application(s)**

The following information is applicable to the present application which is made under Section 24:-

Earlier Application No. ..... Filing Date .....

8. **Agent**

The following is authorised to act as agent in all proceedings in connection with the obtaining of a patent to which this request relates and in relation to any patent granted:-

MACLACHLAN & DONALDSON, 47 Merrion Square, Dublin 2

9. **Address for Service (if different to that at 8)**

MACLACHLAN & DONALDSON, at their address as recorded for the time being in the Register of Patent Agents (Rule 92)

Signed Name(s) RICHARD McCORMICK

By Cff. M. McBoum .....
MACLACHLAN & DONALDSON, Applicant's Agents

Date **23rd January 2002**

AN EQUINE FEED PRODUCT

The present invention relates to an equine feed product and in particular to a feed product that is used as a feed supplement.

Four products are derived from the oxidation of foodstuffs in the Kreb's Cycle, namely water, carbon dioxide, energy and heat. Carbohydrate sources vary in their ability to derive heat in the oxidation process. Oats produce less heat than barley, which in turn produces less heat than maize. The production of excess heat by a foodstuff is an undesirable side effect, which may result in excess sweating giving rise to electrolyte loss. This side effect may adversely affect the performance of a horse that is undergoing intensive training and subsequently partaking in horse-racing events.

Furthermore it is known that feedstuffs producing high energy in bovines cause the overall pH level in the intestine to decrease (Merck Manual). Thus there is an increased possibility of gastrointestinal ulceration and/or abomasal ulcers occurring. It is believed that this effect can be translated from cattle to horses. In addition, the most common cause of laminitis in horses is carbohydrate overload, i.e. when a horse overeats on grain or corn. It is also known that horses fed on barley have an increased risk of enteritis, laminitis and colic, whilst horses fed on an oat based diet are less likely to suffer these side effects. Therefore high quality heavy busheling oats are the safest source of high-energy feeds to administer to horses and pose the least risk of enteritis, laminitis and colic. However a diet consisting solely of oats is deficient in some key nutrients to varying degrees.

This invention relates to a feed product that is used as an oat-balancing supplement.

It is common practice to supplement a horse diet with balancers. Such equine products on the market include Twydil Racing (Pavesco, Basel), Kossolian (Day Son & Hewitt, England) and Gowla (Greencore Agrisales). Twydil Racing contains a balance of amino acids, trace elements, magnesium and vitamins to specifically supplement a diet consisting of a basic ration of oats, hay, bran or the like. Furthermore the manufacturers suggest that

an adult horse in intensive training ideally requires a daily supplement comprising Twydil Racing and a further supplement Twydil PMC, where Twydil PMC guarantees the continuous bioavailability of calcium and phosphorus. Twydil PMC also regulates the metabolism of the mesenchymatous tissues and stimulates the metabolism of oestoblasts, chondrocytes and fibroblasts. However, it is an inconvenience to have to co-ordinate both supplements into a horses diet.

Kossolian is a balanced supplement that contains iodised minerals, spices, trace elements and vitamin B_{12}. Kossolian is widely used by racehorse trainers to combat the effects of high feeding and to prevent staleness. It is recommended that Kossolian be administered to the horse daily mixed well into moistened feed. Gowla is a supplement that contains a mixed balance of proteins, oils, fibre, minerals, trace elements and vitamins. Despite this there are deficiencies when giving a horse the above feeds as a balancing agent in conjunction with an oat based diet. These deficiencies affect the ability performance of a horse when racing.

The present invention seeks to alleviate the problems associated with the above feed regimes.

Accordingly, the present invention provides an equine oat-balancing feed supplement comprising a mix of ingredients including lysine, iodine, copper, magnesium, zinc and calcium, where the quantity of lysine present in the oat-balancing feed supplement fed to the animal per day ranges between 3.00g and 18.00g according to the age of the animal.

Advantageously the ingredients are present in the following ranges relative to 1g of lysine.

Iodine	$5.3 \times 10^{-4} - 7.9 \times 10^{-4}$g
Copper	$5.3 \times 10^{-3} - 7.9 \times 10^{-3}$g
Magnesium	$2.1 \times 10^{-1} - 3.2 \times 10^{-1}$g
Zinc	$1.6 \times 10^{-2} - 2.4 \times 10^{-2}$g
Calcium	$5.3 \times 10^{-1} - 8.0 \times 10^{-1}$g

The quantity of Iodine, Copper, Magnesium, Zinc and Calcium in the oat-balancing feed supplement fed to each animal is calculated by multiplying the quantity of each ingredient by the quantity of lysine present in the oat-balancing feed supplement being fed to the animal.

Advantageously, the mix of ingredients are present in the following optimal ratio calculated relative to 1g lysine:-

6.6×10^{-4}g	of	Iodine
6.6×10^{-3}g	of	Copper
2.6×10^{-1}g	of	Magnesium
2.0×10^{-2}g	of	Zinc
6.6×10^{-1}g	of	Calcium

Advantageously the supplement further includes one or more of the following:

Vitamin A	Vitamin B_{12}
Vitamin D	Biotin
Vitamin E	Vitamin C
Vitamin K	Cobalt
Folic Acid	Selenium
Nicotinic Acid	Methionine
Pantothenic Acid	Threonine
Thiamine	Choline
Riboflavin	Iron
Pyridoxine	Manganese

where each of the further ingredients are present in the following ratios and ratio ranges (± 20%) relative to 1g lysine

	Optimal Ratio	**Optimal Ratio Range**
Vitamin A	3.3×10^3 IU/g	$2.7 \times 10^3 - 3.9 \times 10^3$ IU/g
Vitamin D	3.3×10^2 IU/g	$2.7 \times 10^2 - 3.9 \times 10^2$ IU/g

Vitamin E	1.3×10^2 IU/g	$1.0 \times 10^2 - 1.6 \times 10^2$ IU/g
Vitamin K	3.3×10^{-4}g	$2.7 \times 10^{-4} - 3.9 \times 10^{-4}$g
Folic Acid	1.0×10^{-2}g	$0.8 \times 10^{-2} - 1.2 \times 10^{-2}$g
Nicotinic Acid	6.6×10^{-3}g	$5.3 \times 10^{-3} - 7.9 \times 10^{-3}$g
Pantothenic Acid	2.6×10^{-3}g	$2.1 \times 10^{-3} - 3.1 \times 10^{-3}$g
Thiamine	2.6×10^{-3}g	$2.1 \times 10^{-3} - 3.1 \times 10^{-3}$g
Riboflavin	3.2×10^{-3}g	$2.6 \times 10^{-3} - 3.8 \times 10^{-3}$g
Pyndoxine	1.6×10^{-3}g	$1.3 \times 10^{-3} - 1.9 \times 10^{-3}$g
Vitamin B12	1.3×10^{-3}g	$1.0 \times 10^{-3} - 1.6 \times 10^{-3}$g
Biotin	2.6×10^{-4}g	$2.1 \times 10^{-4} - 3.1 \times 10^{-4}$g
Vitamin C	0.26g	0.21 – 0.31g
Cobalt	$2.6 - 10^{-4}$g	$2.1 \times 10^{-4} - 3.1 \times 10^{-2}$g
Selenium	$1.3 - 10^{-4}$g	$1.0 \times 10^{-4} - 1.6 \times 10^{-4}$g
Methiosine	0.33g	0.26 – 0.40g
Threonine	0.33g	0.26 – 0.40g
Choline	5.3×10^{-2}g	$4.2 \times 10^{-2} - 6.4 \times 10^{-2}$g
Iron	4.0×10^{-2}g	$1.6 \times 10^{-2} - 2.4 \times 10^{-2}$g
Manganese	2.0×10^{-2}g	$1.6 \times 10^{-2} - 2.4 \times 10^{-2}$g

The feed product is not limited to the ingredients and any other ingredient that suggests itself to a person skilled in the art and is suitable as a food stuff may be included.

Advantageously, the six central ingredients are combined together in the above optimal ratio's. Preferably, one or more of the further ingredients are combined with the six-central ingredients.

Ideally, the gross weight of the oat-balancing feed supplement ranges between 5.4g and 8.0g relative to 1g of lysine. Advantageously, the oat-balancing feed supplement can be made up to any desired gross weight. This is done by multiplying the ideal gross weight by a factor to bring it to its desired gross weight and then multiplying the ratio quantities of each of the ingredients by that same factor to attain the desired quantities of each of the individual ingredients.

Advantageously, an inert material is combined with the six central ingredients and any further ingredients which could be combined with the six central ingredients to bring the oat-balancing feed supplement to a gross-weight ranging between 5.4g and 8.0g relative to 1g of lysine. Ideally, the inert material does not interfere with any of the six central

ingredients or further ingredients. It is preferable for the inert-material to be cereal wheat, however any suitable material that suggests itself to a person skilled in the art can be used.

Preferably, the oat-balancing feed supplement is administered to the horses in conjunction with any oat-based diet. Ideally, the oat-balancing feed supplement is fed to the horses with regard to their age.

Advantageously, a foal aged 3-6 months receives 3.75g ± 20% of lysine a day from the oat-balancing feed supplement, therefore ideally a foal receives 25g ± 20% of the oat-balancing feed supplement a day.

Advantageously, a foal aged 6-12 months receives 7.5g ± 20% of lysine a day from the oat-balancing feed supplement, therefore ideally a foal receives 50g ± 20% of the oat-balancing feed supplement a day.

Advantageously, a yearling aged 12-18 months receives 11.25g ± 20% of lysine a day from the oat-balancing feed supplement, therefore ideally a foal receives 75g ± 20% of the oat-balancing feed supplement a day.

Advantageously, an adult aged 18+ months receives 15g ± 20% of lysine a day from the oat-balancing feed supplement, therefore ideally a foal receives 100g ± 20% of the oat-balancing feed supplement a day.

Oats vary in quality due to the environment in which the oats are grown. It is commonly known within the industry that Canadian Oats or American Oats have better nutritional value than either Australian or Irish Oats. Top quality Canadian/America Oats comprise a busheling weight at 50 lb with 11% moisture content. Australian Oats have a busheling weight of less than 50 lb with 11% moisture content and Irish oats have a low busheling weight of less than 45 lb and a high moisture content at 14%.

Initially experiments were conducted where possible on each of the six central ingredients in order to determine the optimum levels of each ingredient required by a horse. Ideally,

the determined optimum level is used to calculate the weight of each ingredient required in the feed product.

Experiment One

Lysine, methionine and threonine are essential amino acids. Trials were conducted on eleven horses (eight geldings and three fillies) where the horses were randomly split into three groups. Two groups contained four horses and the third group contained three horses. The horses varied in age between three and eight years old with an average body weight of 500kg. The Packed Cell Volume's (PCV's) and haemoglobin levels of each horse were tested. Visual observations such as coat colour and racecourse performances were also monitored. In these experiments all three amino acids were administered to the horses together as all three amino acids are essential. The quantities of methionine and threonine were constant for each group whilst the quantity of lysine was varied between the groups. Oats are deficient in lysine therefore it is necessary to boost the horses intake of lysine while maintaining a constant level of methionine and threonine

Quantities of Amino Acid administered to Horses Daily

Group	No. of Horses	Lysine g/day	Methionine g/day	Threonine g/day
1	4	5	5	5
2	4	10	5	5
3	3	15	5	5

It was determined that 15 g/day of lysine for a horse of average weight (500kg) proved to have the optimum response, the horses tested on average had PCV levels in excess of 42 L/L, haemoglobin levels in excess of 14 g per d/l, optimum coat colour and racecourse performance.

Ideally, a pure lysine source is used to provide lysine for this equine oat-balancing feed supplement. Alternatively lysine can be sourced from either soya bean meal or flax seed. Other sources of lysine that are known to a person skilled in the art can also be used. Soya bean meal is sometimes considered to have goitrogenic factors associated with it.

However obtaining lysine from flaxseed is quite labour intensive and for this reason despite the disadvantages of soya bean meal many choose it over flax seed.

Experiment Two

Iodine is required for the production of thyroxine, which is produced in the thyroid gland. Thyroxine is a haematinic agent and is necessary for the production of red blood cells. Prior research in which the blood samples of six poor performing racehorses were analysed indicated that the horses were anaemic. Thyroxine was administered to each horse and within a matter of weeks the red cell parameters were all elevated (Waldron E, Mease, New Bolton, PA, 1979). In this research, it is preferred to administer iodine to the horse and allow the thyroid gland manufacture thyroxine.

Three levels of iodine were administered to thoroughbred horses:

1. 1mg/day Iodine.
   The red blood cell parameters were low, the PCV level was below 40 L/L and the Haemoglobin level was below 12 g per d/l.

2. 10mg/day Iodine.
   The red blood cell parameters were determined to be at an optimum level, the PCV level was between 42 and 45 L/L whilst the Haemoglobin level was between 12 and 14 g per d/l.

3. 30mg/day Iodine.
   After three weeks the horses had a diminished appetite and were indifferent about feed. Excess iodine is known to depress and damage the thyroid gland.

Experiment Three

Copper is essential in the growth and development of many systems. Horses in particular are considered to have a high tolerance of copper, unlike cattle and sheep. Ideally copper

supplements are delivered to a horse in one of two forms, as an inorganic copper salt, for example, copper sulfate or as chelated copper. However where molybdenum predominates in grass or hay, antagonism towards oral inorganic copper will occur. As a consequence a growing horse can develop one or more of the following; epiphystitis, decreased red cell production, poor coat colour or lack of thrive. It is vital that a growing horse has sufficient levels of copper to maintain red cell production and correct bone development, particularly at the physeal growth stage.

Zinc is necessary for a number of systems within the body, most notably the immune system. Copper and Zinc are considered to have common absorption sites. Excess quantities of one element may interfere with the absorption of the other. The desired optimum ratio of zinc to copper is 3:1.

A trial was conducted on ten thoroughbred yearlings (six colts and four fillies) using optimum levels of copper and zinc. The horses were divided into two groups with five horses in each group. The trials were conducted over a period of ten weeks. During this period the horses were stabled, each horse was handwalked for one hour a day and put to grass for three hours a day. The grass was analysed and found to have a high molybedenum content.

The copper used in the oat-balancing feed supplement for the first group of five horses was inorganic copper, copper sulfate whilst the copper used in the oat-balancing feed supplement for the second group was chelated copper. The horses has an average body weight of 425kg. The horses were fed a combined diet of Ryegrass Hay, Rolled Irish Oats, Cooked Flaxseed and the oat balancing feed supplement. At the end of the trial periods the horses average body weight had increased to approximately 475kg.

In trial one, 100g of the oat balancing feed supplement was fed to each horse daily. There was 100mg of inorganic copper in present in the oat balancing feed supplement.

Group 1: 100mg/day Inorganic Copper & 300mg/day Chelated Zinc
The horses experienced lack of thrive, decreased red cell production and poor coat colour.

In the second group the five horses were fed the same combined diet however the copper present in the oat balancing feed supplement was chelated copper. Again there was 100mg of copper present in 100g of the oat balancing feed supplement.

Group 2: 100mg/day Chelated Copper & 300mg/day Chelated Zinc
The horses experienced normal thrive, normal PCV levels in excess of 42 L/L and excellent coat colour.

Experiment Four

Magnesium is considered to be an essential daily mineral in equine diets. A deficiency of magnesium in the diet in conjunction with any condition that will produce stress can lead to Stress Tetany. An example of a stress-causing condition is transportation of the horse over long distances. Initially this was observed in a horse that was being fed a magnesium deficient diet. After a period of exercise and transportation for a period of one hour, the horse exhibited tetanic symptoms. Some weeks later the same horse was transported to another location. The journey lasted approximately four hours. Again the horse exhibited Stress Tetany. A magnesium supplement was introduced into the horse's diet and the problem was successfully resolved.

In a preferred embodiment of the present invention magnesium oxide is used to provide the magnesium. Alternatively magnesium sulphate or any suitable magnesium source can be used.

Trials conducted where the quantity of magnesium introduced into the horse was varied from 2g/day of magnesium oxide to 4g/day of magnesium oxide. The horses reached optimum performance using 4g/day of magnesium oxide. An improvement in the temperament of the horse was observed in conjunction with weight gain and better coat colour.

Experiment Five

It is believed that high levels of calcium in a horses diet leads to the condition known as Osteochondrosis, (Racehorses at Risk, Dr. Lennart Krook, Cornell University, USA). A horse that is fed a diet of oats without a calcium supplement is susceptible to laminitis.

A number of trials were conducted on horses throughout various stages of development fed with varying levels of calcium. The first two trials were conducted on twelve foals over a nine month period. The trial began when the foals were aged three months. The foals (at three months) had an average body weight of 118kg. Each foal was fed 2.5g of Calcium Carbonate a day within a balanced diet for a period of three months. The Calcium Carbonate dosage was then increased to 5.0g a day for a further period of six months as the foals average weight had increased to 240kg.

The third trial comprised a group of ten yearlings with average weight 425kg body. The yearlings were fed 7.5g of Calcium Carbonate a day over a period of ten weeks. The fourth trial was conducted on adult horses with average body weight of 500kg aged 18+ months. Each adult horse was fed 10.0g of Calcium Carbonate per day.

The results of these trials are synopsised below:

Age of horse	Average weight	Quantity of Calcium Carbonate ($CaCO_3$)
Foals 3-6 months	118 Kg at 3 months 240 Kg at 6 months	2.5g/day
Foals 6-12 months	240 Kg at 6 months 375 Kg at 12 months	5.0g/day
Yearlings 12-18 months	375 Kg at 12 months 475 Kg at 18 months	7.5g/day
Adult horses 18+ months	500 Kg at 18+ months	10.0g /day

The horses exhibited clinically adequate bone development, correct limb formation and normal weight gain.

A preferred embodiment of the invention incorporates the results of the previous experiments. The six central ingredients are combined together in the following quantities when the feed supplement is made up to a gross weight of 2kg.

	Quantity
Lysine	300g
Iodine	200mg
Copper (Chelated Form)	2,000mg
Magnesium Oxide	80g
Zinc (Chelated Form)	6,000mg
Calcium Carbonate	200g

The preferred embodiment incorporates magnesium in the form of magnesium oxide and calcium in the form of calcium carbonate. This is due to the beneficial antacid effect of combined magnesium oxide calcium carbonate.

The following ingredients comprise non-essential components of the feed supplement and whilst it is beneficial to have each of the ingredients present, one or more can be omitted. In the preferred embodiment each ingredient is present in the quantities outlined below.

	Quantity
Vitamin A	1 million international units
Vitamin B_{12}	40,000mg
Vitamin C	80g
Vitamin D	100,000 international units
Vitamin E	40,000 international units
Vitamin K	100mg
Folic Acid	3,000mg
Nicotinic Acid	2,000mg
Pantothenic Acid	800mg

Thiamine	800mg
Riboflavin	960mg
Pyridoxine	480mg
Biotin	80mg
Cobalt	80mg
Selenium	40mg
Methionine	100g
Threonine	100g
Choline	16,000mg
Iron (Chelated Form)	12,000mg
Manganese (Chelated Form)	6,000mg

The balance of material required to bring the feed supplement to its gross weight in this preferred embodiment comprises an inert material for example cereal wheat that does not interfere with the active ingredients i.e. the amino acids, vitamins, minerals and trace elements of the feed supplement.

It will of course be understood that the feed supplement is not restricted to a gross weight of 2kg. The feed supplement can be made to any desired quantifiable weight provided the weight/weight ratio's are consistent. For example:-

Lysine	**Gross Weight of Feed Supplement**
150g	1kg
300g	2kg
450g	3kg
600g	4kg

Ideally the preferred embodiment of the feed supplement is administered to the horses in conjunction with an oat based diet with regard to their age. For example, a feed programme may comprise of the following

Horse	Age	Quantity of Feed Supplement
Foals	3-6 months	25g/day
Foals	6-12 months	50g/day
Yearlings	12-18 months	75g/day
Adults	18 months +	100g/day

Experimental Trials using the preferred embodiment of the feed supplement were carried out on horses at various stages of development.

Experiment Six

Twenty-one thoroughbred yearlings were divided into two groups. The first group was a control group, thus was not fed the oat-balancing feed supplement whilst the second group was fed the oat-balancing feed supplement. This trial lasted for a period of six months. Both groups were of similar average weight which ranged between 475kg and 525kg.

Group 1 comprised of six colts and four fillies. The horses were fed a diet of proprietary compound feed, Ryegrass hay and balanced electrolytes.

Group 2 comprised of six colts and five fillies. The horses were fed freshly rolled oats, oat-balancing feed supplement according to the invention, Ryegrass hay and balanced electrolytes. The total quantity of oat-balancing feed supplement given was 100g/day, where 50g was given each morning and evening.

The PCV and Haemoglobin levels of both groups were tested.

Group 1	:	Average PCV level	39L/L
		Average Haemoglobin Level	12.2 g per d/l
Group 2	:	Average PCV level	42L/L
		Average Haemoglobin Level	14 g per d/l

Visual observations determined that Group 2 had a better coat colour, were leaner in condition, easier to train and had better market acceptance.

Experiment Seven

This trial was conducted on a stud farm with a history of crooked foals with poor market acceptance as yearlings. Detailed analysis of the soil and grass of the farm were undertaken. As a consequence, a customised mineral supplement for the farm was developed. The customised mineral supplement balanced the deficiencies in the grass and was provided in the field as oral paste the grazing season.

In addition, twelve thoroughbred foals (seven colts and five fillies) were placed on a diet of Rolled Oats (1kg/day) and oat-balancing feed supplement (25g/day) two weeks prior to weaning. Post weaning the foals were placed on a diet of rolled oats (2-3kg/day) and oat-balancing feed supplement (50g/day) for a period of four months. The foals gained an average 24kgs/month during the four months period. When sold as yearlings there was good market acceptance.

Experiment Eight

Twelve horses fed rolled oats, Ryegrass hay, oat-balancing feed Supplement (100g/day) and balanced electrolytes over a four year period exhibited average PCV levels of 42 L/L and Haemoglobin levels of 14g per d/l. Initial visual observations after four weeks showed the horses having improved coat colour and improved racecourse performance.

Experiment Nine

A four year old filly with poor coal colour, poor appetite and questionable temperament was placed on a diet of rolled oats balanced electrolytes and oat-balancing feed supplement (100g/day). After thirty days, visual observations indicated an improved coat colour, appetite and temperament. Improved racecourse performance was also observed.

Experiment Ten

A four year old gelding was placed on a diet of Canadian Oats, Ryegrass hay and oat-balancing feed supplement (100g/day). After a period of one week the horse ran unplaced over a distance of 1600m. After a three week period the horse ran second over the same distance. After a five week period the horse won by nine lengths and lowered the track record by two seconds over the same distance.

Experiment Eleven

Three trials were conducted where the horses used in the trials were fed different quality oats in conjunction with the preferred embodiment of the oat balancing feed supplement.

(a) A horse (filly) with average weight 500kg was fed a diet of Hay, Electrolytes, Canadian Oats and 80g per day of the oat balancing feed supplement. After four weeks the horse won a race and after a further two weeks was placed third in a Grade III race.

(b) Four horses were fed a diet of Australian Oats and 100g per day of the oat balancing feed supplement. Each horse exhibited excellent RBC parameters, Haemoglobin levels and PCV levels. Of the two horses that have raced whilst on this dietary regime, one horse ran six times, won three races, ran second in two races and came fourth in one race. The second horse ran twice and was placed first in one race and second in the second race.

(c) Two horses were fed a diet of Irish oats plus 120g per day of the oat balancing feed supplement. The first horse (a five year old gelding) ran four times whilst on this dietary regime and won once. The second horse (a four year old filly) ran three times whilst on this dietary regime and won twice.

It will of course be understood that the invention is not limited to the specific details as herein described, which are given by way of example only, and that various alternations and modifications may be made without departing from the scope of the invention.

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